

selected from fumaric acid, maleic acid, phthalic anhydride, terephthalic acid, 1,4-cyclohexanedicarboxylic acid, 1,3-cyclohexanedicarboxylic acid, 1,2-cyclohexanedicarboxylic acid, succinic acid, adipic acid, glutaric acid, pimelic acid, suberic acid, azelaic acid, sebacic acid, 1,12-dodecanedioic acid, etc., or the corresponding anhydrides, and of a glycol component comprising 70 to 100 mol percentage of neopentyl glycol and/or 2-butyl-2-ethyl-1,3-propanediol and 0 to 30 mol percentage of another glycol selected from ethyleneglycol, propyleneglycol, 1,4-butanediol, 1,6-hexanediol, 1,4-cyclohexanediol, 1,4-cyclohexanedimethanol, 2-methyl 1,3-, hydrogenated Bisphenol A, hydroxypivalate of neopentyl glycol.

4. **(Amended)** Binder composition according to claim 1 wherein the carboxylic acid group containing amorphous polyester is a branched polyester incorporating up to 15 mol percentage relative to isophthalic acid, of a polyacid such as trimellitic acid, pyromellitic acid, etc, or their corresponding anhydrides.

5. **(Amended)** Binder composition according to claim 1 wherein the carboxylic acid group containing amorphous polyester is a branched polyester incorporating up to 15 mol percentage relative to neopentyl glycol and/or 2-butyl-2-ethyl-1,3-propanediol, of a polyol such as trimethylolpropane, ditrimethylolpropane, pentaerythritol.

6. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl functionalized semi-crystalline polyester is composed of 75 - 100 mol percentage of terephthalic acid and/or 1,4-cyclohexanedicarboxylic acid and from 0 to 25 mol percentage of another diacid selected from fumaric acid, maleic acid, phthalic anhydride, isophthalic acid, terephthalic acid, 1,4-cyclohexanedicarboxylic acid, 1,3-cyclohexanedicarboxylic acid, 1,2-cyclohexanedicarboxylic acid, succinic acid, adipic acid, glutaric acid, pimelic acid, suberic acid, azelaic acid, sebacic acid, 1,12-dodecanedioic acid, etc., and of a glycol component comprising from 75 to 100 mol percentage of an aliphatic non-branched diol selected from ethyleneglycol, 1,3-propanediol,

1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, 1,12-dodecanediol, 1,13-tridecanediol, 1,14-tetradecanediol, 1,15-pentadecanediol, 1,16-hexadecanediol, etc. used in a mixture or alone, and 0 to 25 mol percentage of another glycol selected from propyleneglycol, neopentyl glycol, 2-methyl-1,3-propanediol, 2-butyl,2-ethyl-1,3-propanediol, hydrogenated Bisphenol A, hydroxypivalate of neopentyl glycol, 1,4-cyclohexanediol, 1,4-cyclohexanedimethanol.

7. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl functionalized semi-crystalline polyester is composed of 75 - 100 mol percentage of a linear non-branched aliphatic diacid selected from succinic acid, adipic acid, glutaric acid, pimelic acid, suberic acid, azealic acid, sebacic acid, 1,12-dodecanedioic acid, etc. used in a mixture or alone, and from 0 to 25 mol percentage of another diacid selected from fumaric acid, maleic acid, phthalic anhydride, terephthalic acid, isophthalic acid, 1,2-cyclohexanedicarboxylic acid, 1,3-cyclohexanedicarboxylic acid, 1,4-cyclohexanedicarboxylic acid, etc., and of a glycol component comprising from 75 to 100 mol percentage of a cycloaliphatic diol such as 1,4-cyclohexanediol, 1,4-cyclohexanedimethanol, hydrogenated Bisphenol A, etc. used in a mixture or alone, or an aliphatic non-branched diol such as ethyleneglycol, 1,3-propanediol, 1,4-butanediol, 1,5-pentanediol, 1,6 hexanediol, 1,7-heptanediol, 1,8-octanediol, 1,9-nonanediol, 1,10-decanediol, 1,11-undecanediol, 1,12-dodecanediol, 1,13-tridecanediol, 1,14-tetradecanediol, 1,15-pentadecanediol, 1,16-hexadecanediol, etc. used in a mixture or alone, and from 0 to 25 mol percentage of another glycol selected from propyleneglycol, neopentyl glycol, 2-methyl-1,3-, 2-butyl, 2-ethyl-1,3-propanediol, 1,4-cyclohexanediol, 1,4cyclohexanedimethanol, hydrogenated Bisphenol A.

8. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl functionalized semi-crystalline polyester is a branched polyester incorporating up to 15 mol percentage based on the total of terephthalic acid, 1,4-cyclohexanedicarboxylic acid or non-branched aliphatic diacids, of a polyacid such as trimellitic acid, pyromellitic acid, etc., or their corresponding anhydrides.

9. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl functionalized semi-crystalline polyester is a branched polyester incorporating up to 15 mol percentage based on the total of aliphatic non-branched diols or cycloaliphatic diols, of a polyol such as trimethylolpropane, ditrimethylolpropane, pentaerythritol.

10. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl functionalized semi-crystalline polyester is a branched polyester incorporating up to 30 mol percentage based on the total of terephthalic acid, 1,4-cyclohexanedicarboxylic acid or non-branched aliphatic diacids and/or on the total of aliphatic non-branched diols or cycloaliphatic diols, of monofunctional carboxylic acids having at least two hydroxyl groups wherein one or more of the hydroxyl groups can be hydroxyalkyl substituted, selected from  $\alpha,\alpha$ -bis-(hydroxymethyl)-propionic acid (dimethylolpropionic acid),  $\alpha,\alpha$ -bis-(hydroxymethyl)-butyric acid,  $\alpha,\alpha,\alpha$ -tris(hydroxymethyl)-acetic acid,  $\alpha,\alpha$ -bis-(hydroxymethyl)-valeric acid,  $\alpha,\alpha$ -bis-(hydroxy)propionic acid or  $\alpha$ -phenylcarboxylic acids having at least two hydroxyl groups directly pendant to the phenyl ring (phenolic hydroxyl groups) such as 3,5-dihydroxybenzoic acid.

11. **(Amended)** Binder composition according to claim 1 wherein the carboxylic acid group containing isophthalic acid rich amorphous polyester has:

- an acid number from 15 to 100 mg KOH/g and preferably from 30 to 70 mg KOH/g;
- a number averaged molecular weight ranging from 1100 to 15000 and preferably from 1600 to 8500;
- a glass transition temperature ( $T_g$ ) from 40 to 80°C ; and
- an ICI (cone/plate) viscosity at 200°C ranging from 5 to 15000 mPa.s.

12. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl group containing semi-crystalline polyester has:

- an hydroxyl number from 10 to 100 mg KOH/g and preferably from 15 to 80 mg KOH/g;

- a number averaged molecular weight ranging from 1100 to 17000 and preferably from 1400 to 11200;
- a fusion zone from 50 to 150°C;
- a glass transition temperature (T<sub>g</sub>) from -50 to 50°C;
- a degree of crystallinity of at least 5 J/g and preferably 10J/g; and
- an ICI (cone/plate) viscosity at 175°C ranging from 5 to 10000 mPa.s.

13. **(Amended)** Binder composition according to claim 1 wherein the thermosetting polyester blend is composed of:

- 55 to 95 and preferably 70 to 90 parts by weight of the carboxylic acid group containing isophthalic acid rich amorphous polyester; and
- 45 to 5 and preferably 30 to 10 parts by weight of the hydroxyl group containing semi-crystalline polyester.

14. **(Amended)** Binder composition according to claim 1 wherein the curing agent having functional groups reactive with the carboxylic acid groups of the isophthalic acid rich amorphous polyester, is a polyepoxy compound or a  $\beta$ -hydroxyalkylamide containing compound.

15. **(Amended)** Binder composition according to claim 1 wherein the curing agent having functional groups reactive with the hydroxyl groups of the semi-crystalline polyester, is a blocked polyisocyanate compound.

16. **(Amended)** Binder composition according to claim 1 wherein the carboxylic acid group containing amorphous polyester comprises a catalyzing amount of thermosetting catalyst ranging from 0 to 5 weight percentage.

17. **(Amended)** Binder composition according to claim 1 wherein the hydroxyl group containing semi-crystalline polyester comprises a catalyzing amount of thermosetting catalyst ranging from 0 to 5 weight percentage.

18. **(Amended)** Binder composition according to claim 1 wherein the binder is substantially based on:

- 28 to 93, preferably 43 to 86 parts by weight of the carboxylic acid group containing isophthalic acid rich amorphous polyester
- 43 to 3, preferably 29 to 7 parts by weight of the hydroxyl group containing semi-crystalline polyester
- 1 to 45, preferably 3 to 35 parts by weight of a curing agent having functional groups being reactive with the carboxylic acid groups of the amorphous polyester
- 21.0 to 0.1, preferably 9.0 to 0.5 parts by weight of a curing agent having functional groups reactive with the hydroxyl groups of the semi-crystalline polyester.

22. **(Amended)** Entirely or partially coated substrate, wherein the coating material used, is a powder coating composition according to claim 19.